What is claimed is;

1. A radiation image read-out apparatus comprising a line stimulating light beam source which projects a line stimulating light beam onto a stimulable phosphor sheet storing thereon radiation image information, a line sensor which comprises a plurality of photoelectric convertor elements arranged in the longitudinal direction of the line irradiated portion to receive stimulated emission emitted from the irradiated portion of the stimulable phosphor sheet or the back side of the sheet opposed to the line irradiated portion and convert the amount of stimulated emission to an electric signal, a light collector means which is disposed between the stimulable phosphor sheet and the line sensor and includes a refractive index profile type lens array which converges the stimulated emission onto the respective photoelectric convertor elements of the line sensor, a scanning means which moves the stimulating light beam source and the line sensor relatively to the stimulable phosphor sheet in a direction different form said longitudinal direction, and an image signal read-out means which reads out the output of the line sensor in sequence in the respective positions in which the stimulating light beam and the line sensor are moved by the scanning means and reads out an image signal representing the radiation image information stored in the stimulable phosphor sheet, wherein the improvement comprises that

the photoelectric convertor elements of the line sensor

and the refractive index profile type lenses of the refractive index profile type lens array are arranged at pitches such that the frequency band of the periodic pattern generated due to the pitches of the refractive index profile type lenses in said refractive index profile type lens array are higher than the frequency band of a radiation image information reproduced on the basis of the image signal.

2. A radiation image read-out apparatus as defined in Claim 1 further comprising a frequency component removal means which removes a frequency component corresponding to the frequency band of the periodic pattern from the image signal.

3. A radiation image read-out apparatus as defined in Claim 1 in which the pitch S of the refractive index profile type lenses is not larger than double the pitch L of the photoelectric convertor elements of the line sensor ($S \leqq 2L$).

4. A radiation image read-out apparatus as defined in Claim 3 in which the pitch L of the photoelectric convertor elements of the line sensor is in the range of 25 μm to 250 μm.

5. A radiation image read-out apparatus as defined in Claim 3 in which the pitch S of the refractive index profile type lenses is in the range of 10 μm to 500 μm.